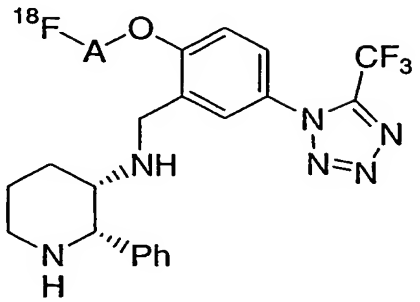
WHAT IS CLAIMED:

1. A compound of the formula:



wherein:
A is $-CD_2-$ or $-CH_2CH_2-$;

or a pharmaceutically acceptable salt thereof.

2. A compound which is:
[^{18}F][2-fluorodideuteromethoxy-5-(5-trifluoromethyl-tetrazol-1-yl)-benzyl]-([2S,3S]-2-phenyl-piperidin-3-yl)-amine;
or a pharmaceutically acceptable salt thereof.

3. A compound which is:
[^{18}F][3-fluoroethoxy-5-(5-trifluoromethyl-tetrazol-1-yl)-benzyl]-([2S,3S]-2-phenyl-piperidin-3-yl)-amine;
or a pharmaceutically acceptable salt thereof.

4. A radiopharmaceutical composition which comprises the compound of Claim 1 and a pharmaceutically acceptable carrier or excipient.

5. A method for the diagnostic imaging of neurokinin-1 receptors in a mammal which comprises administering to a mammal in need of such diagnostic imaging an effective amount of the compound of Claim 1, and obtaining an image of neurokinin-1 receptors using positron emission tomography.

6. The method of Claim 5 wherein the mammal is a human.

7. A method for the diagnostic imaging of the brain in a mammal which comprises administering to a mammal in need of such diagnostic imaging an effective amount of the compound of Claim 1, and obtaining an image of the brain in the mammal using positron emission tomography.

8. The method of Claim 7 wherein the mammal is a human.

9. A method for the diagnostic imaging of tissues bearing neurokinin-1 receptors in a mammal which comprises administering to a mammal in need of such diagnostic imaging an effective amount of the compound of Claim 1, and obtaining an image of the tissues using positron emission tomography.

10. The method of Claim 9 wherein the mammal is a human.

11. A method for the detection or quantification of neurokinin-1 receptors in mammalian tissue which comprises contacting such mammal tissue in which such detection or quantification is desired with an effective amount of the compound of Claim 1, and detecting or quantifying the neurokinin-1 receptors using positron emission tomography.

12. The method of Claim 11 wherein the mammalian tissue is human tissue.

13. A method for the diagnostic imaging of inflammatory conditions where substance P is involved and/or neurokinin-1 receptors are upregulated in a mammal which comprises administering to the mammal in need of such diagnostic imaging an effective amount of the compound of Claim 1, and obtaining an image of the mammal using positron emission tomography.

14. The method of Claim 9 wherein the mammal is a human.

15. A method for the diagnostic imaging of Alzheimer's Disease or multiple sclerosis in a mammal which comprises administering to the mammal in need of such diagnostic imaging an effective amount of the compound of Claim 1, and obtaining an image of the mammal using positron emission tomography.

16. The method of Claim 9 wherein the mammal is a human.